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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,505	12/05/2003	Motoaki Nishikawa	Q78746	7848
23373 7590 04/17/2008				
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EXAMINER				
DANIELS, MATTHEW J				
ART UNIT		PAPER NUMBER		
1791				
MAIL DATE		DELIVERY MODE		
04/17/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/727,505

Applicant(s)

NISHIKAWA ET AL.

Examiner

MATTHEW J. DANIELS

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 16-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 16-25 is/are rejected.
- 7) ☒ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. **Claims 1 and 18** are rejected under 35 U.S.C. 102(b) as being anticipated by Goeb (USPN 5688573). **As to Claim 1**, Goeb teaches a method of forming a display which could be used as a display of a packaging case comprising the steps of:

Irradiating a laser beam on a front face of an article which could be used as a packaging case produced by a paper sheet (50, Fig. 5) having a coloring agent (8:55-9:21) and a resin film (10, Figs. 1-6) protecting the front face and being on the front face (10, Figs. 1-6).

Evaporating the colored layer and the resin film with the laser beam (9:41-50), thereby forming the display (Figs. 1-6), which could inherently be used as a packaging case.

As to Claim 18, Goeb teaches a method of forming a display which could be used as a display of a packaging case comprising the steps of:

Irradiating a laser beam on a front face of an article which could be used as a packaging case produced by a paper sheet (50, Fig. 5) having a coloring agent (8:55-9:21) and a resin film (10, Figs. 1-6) protecting the front face and being on the front face (10, Figs. 1-6).

Evaporating the colored layer and the resin film with the laser beam (9:41-50), thereby forming the display (Figs. 1-6), which could inherently be used as a packaging case,

Wherein the resin layer is (comprised of) polyester (Abstract).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1, 3, 5-8, 16 and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hughes (USPN 6169266) in view of Ward (USPN 2192423) and Sonobe (USPN 6244176). **As to Claim 1**, Hughes teaches a method of forming a display which could inherently be used as a display of a packaging case, the method comprising:

Irradiating a laser beam on a front face of a material that could be used as a packaging case having a colored layer and a film layer which protects the front face on the front face;

Evaporating the colored layer and the film layer by the laser beam, thereby forming the display on the article which could be used as a display on a packaging case.

Hughes is silent to the paper sheet and to explicit teaching that the ink or paint is a resin. However, these aspects of the invention would have been prima facie obvious for the following reasons:

a) Paper sheet labels are conventional and are disclosed, for example, by Ward. Ward teaches a package (page 1, right column, lines 30-35) having a paper substrate (page 2, right column, lines 35-50), and that it is obvious to ornament the surface (page 2, right column, lines 58-65).

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b) Sonobe teaches an ink which is formed from monomers and oligomers (5:10-22), which is interpreted to be a resin.

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the methods of Ward and Sonobe into that of Hughes because:

(a1) Ward suggests ornamentation, which Hughes provides.

(a2) Hughes suggests the method for any article where a design or indicia is required, which Ward provides.

(a3) The paper substrate of Ward would provide a reinforcing layer to the invention of Hughes.

(b1) Hughes suggests wear resistant (2:32) inks (2:47) and the thermosetting inks of Sonobe would provide favorable wear resistance.

(b2) One of ordinary skill in the art would have recognized that the art of Sonobe could be substituted for the ink of Hughes to provide the predictable result that thermosetting layers of ink would be provided in the same or substantially the order required by Hughes.

As to Claims 3 and 7, any of the layers of Hughes is interpreted as the claimed colored layer or the protecting film. In the combination of Ward and Hughes where Ward provides two paper layers or sheets and Hughes provides multiple layers of coating, each of which performs the function of protecting or coloring, the claim limitations drawn to the configuration of layers are met. Hughes is silent to the UV coating material. However, Sonobe teaches UV coating material (ultraviolet curing ink, 5:16-17). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Sonobe into that of Hughes because Hughes suggests wear resistant (2:32) inks (2:47) and the thermosetting inks of Sonobe would provide favorable wear resistance. Additionally, Hughes suggests a particular

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order or layering of inks (black, cyan, magenta, yellow, white), which Sonobe provides. **As to Claims 5 and 6**, Ward provides two paper layers (page 2, right column, lines 35-50). Any of the layers of Hughes is interpreted as the claimed colored layer or the protecting film. In the combination of Ward and Hughes where Ward provides two paper layers or sheets and Hughes provides multiple layers of coating, each of which performs the function of protecting or coloring, the claim limitations are met. **As to Claim 8**, the packaging case of Ward could be used for any of the recited articles (Figures), and in the alternative, it would have been prima facie obvious to adjust the size to store the claimed articles. **As to Claim 16**, Ward provides at least two layers of paper, which provides a base layer which is a paper layer (Fig. 7). **As to Claim 17**, Hughes teaches ablative removal (Abstract), which is interpreted to be evaporation, of a total thickness of a portion of the outer layer and a total thickness of a colored layer adjacent to the resin film layer to form the display (Fig. 5B, item 54). In combination with Sonobe, it would have been obvious to make these layers of a resinous ink, as set forth above under the rejection of Claim 1.

3. **Claims 2 and 4** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hughes (USPN 6169266) in view of Ward (USPN 2192423) and Sonobe (USPN 6244176), and further in view of Robertson (USPN 6007929). Hughes, Ward, and Sonobe teach the subject matter of Claim 1 above under 35 USC 103(a). **As to Claim 2**, Hughes is silent to a carbon dioxide laser. However, carbon dioxide lasers are conventional for laser engraving and marking. For example, Robertson teaches a multilayer coating, one layer evaporated or ablated (Fig. 4), and that a carbon dioxide laser is preferred for its long operating life (4:39-50). It would have been prima

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facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Robertson into that of Hughes, Ward, and Sonobe because Hughes suggests a laser marking method and the carbon dioxide laser of Robertson would provide a long operating life.

As to Claim 4, Hughes is silent to the UV coating material. However, Sonobe teaches UV coating material (ultraviolet curing ink, 5:16-17). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Sonobe into that of Hughes because Hughes suggests wear resistant (2:32) inks (2:47) and the thermosetting inks of Sonobe would provide favorable wear resistance. Additionally, Hughes suggests a particular order or layering of inks (black, cyan, magenta, yellow, white), which Sonobe provides.

4. **Claim 24** is rejected under 35 U.S.C. 103(a) as being unpatentable over Hughes (USPN 6169266) in view of Ward (USPN 2192423) and Sonobe (USPN 6244176), and further in view of Yasui (USPN 5413629). Hughes, Ward, and Sonobe teach the subject matter of Claim 1 above under 35 USC 103(a). **As to Claim 24**, Hughes in combination with the other references cited in the rejection of Claim 1 are silent to the exposing of the paper base. However, Yasui provides a summary of known prior art by teaching that in the method of removing a printing ink by laser light irradiation, a contrast between the paper substrate and the printing ink is required (1:49-54). Thus, Yasui teaches that it is a known technique to provide a paper substrate, a printing ink, and to remove the printing ink by laser light irradiation. One of ordinary skill would have found it obvious to apply the known technique of Yasui to that of Hughes, Ward,

and Sonobe because it would produce merely the predictable results already disclosed by Yasui, namely a contrast between the paper substrate and the printing ink.

5. **Claims 18-23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hughes (USPN 6169266) in view of Ward (USPN 2192423) and Cicci (USPN 4836102). **As to Claim 1**, Hughes teaches a method of forming a display which could inherently be used as a display of a packaging case, the method comprising:

Irradiating a laser beam on a front face of a material that could be used as a packaging case having a colored layer (Fig. 5B, item 46) and a film layer which protects the front face on the front face (Fig. 5B, item 48);

Evaporating the colored layer and the film layer by the laser beam, thereby forming the display on the article which could be used as a display on a packaging case.

Hughes is silent to the paper sheet and to explicit teaching that the ink or paint is a polyester or polypropylene resin. However, these aspects of the invention would have been prima facie obvious for the following reasons:

- a) Paper sheet labels are conventional and are disclosed, for example, by Ward. Ward teaches a package (page 1, right column, lines 30-35) having a paper substrate (page 2, right column, lines 35-50), and that it is obvious to ornament the surface (page 2, right column, lines 58-65).
- b) Cicci teaches that it is known to use polyester resin inks (Abstract, line 10) for transferring ink onto a printable substrate (4:3-9). The process may be used when additional coats of ink of different colors are used (*Id.*).

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the methods of Ward and Cicci into that of Hughes because:

(a1) Ward suggests ornamentation, which Hughes provides.

(a2) Hughes suggests the method for any article where a design or indicia is required, which Ward provides.

(a3) The paper substrate of Ward would provide a reinforcing layer to the invention of Hughes.

(b1) Hughes suggests wear resistant (2:32) inks (2:47) and the thermosetting inks of Cicci would provide favorable wear resistance. The ink of Cicci is commercially available ink (4:18-19), and therefore one would have recognized the ink of Cicci as a substitute for the undisclosed ink type of Hughes.

(b2) Hughes suggests a multilayered ink scheme (Fig. 5B) and Cicci teaches inks that are specifically suggested for a multilayer ink design (4:3-9).

As to Claim 19, Cicci teaches a UV coating material (3:60-4:10). **As to Claims 20-22**, Ward provides at least two paper layers superimposed such that they provide a paper sheet and base layer. Any of the layers of Hughes is interpreted as the claimed colored layer or the protecting film. In the combination of Ward and Hughes where Ward provides two paper layers or sheets and Hughes provides multiple layers of coating, each of which performs the function of protecting or coloring, the claim limitations drawn to the configuration of layers are met. Cicci teaches that it is known to use a UV coating material (3:54-68). **As to Claim 23**, the packaging case of Ward could be used for any of the recited articles (Figures), and in the alternative, it would have been prima facie obvious to adjust the size to store the claimed articles.

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6. **Claim 25** is rejected under 35 U.S.C. 103(a) as being unpatentable over Hughes (USPN 6169266) in view of Ward (USPN 2192423) and Cicci (USPN 4836102), and further in view of Yasui (USPN 5413629). Hughes, Ward, and Cicci teach the subject matter of Claim 18 above under 35 USC 103(a). **As to Claim 24**, Hughes in combination with the other references cited in the rejection of Claim 18 are silent to the exposing of the paper base. However, Yasui provides a summary of known prior art by teaching that in the method of removing a printing ink by laser light irradiation, a contrast between the paper substrate and the printing ink is required (1:49-54). Thus, Yasui teaches that it is a known technique to provide a paper substrate, a printing ink, and to remove the printing ink by laser light irradiation. One of ordinary skill would have found it obvious to apply the known technique of Yasui to that of Hughes, Ward, and Cicci because it would produce merely the predictable results already disclosed by Yasui, namely a contrast between the paper substrate and the printing ink.

Response to Arguments

7. Applicant's arguments filed 16 January 2008 have been fully considered but they are not persuasive. The arguments appear to be on the following grounds:

- a) The top layer of Goeb fails to disclose wear-resistant properties since it contains a pigment. The lower layer would be exposed when the top layer is subject to damage, and if the protective layer of the instant invention is subject to damage, the coloring layer will not deteriorate its appearance.
- b) Goeb provides a material formed from a polymer comprising a polyester diol, but the acrylic sheet material itself is not a polyester resin layer.

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c) Sonobe does not provide a resin material. Sonobe merely discloses an acryl ester type monomer as a vehicle.

d) One would not combine Cicci with Hughes as suggested by the rejection. Hughes teaches away from direct printing processes which are more susceptible to damage and wear.

e) The reason for using an unsaturated polyester resin, as taught by Cicci, is for its oxygen inhibiting characteristic. But these provide benefits in a specific configuration of a conventional printing process. The invention of Cicci requires the ink to be cured to a greater extent in different portions to reduce the adhesion of the ink layer to the ink transfer print pad. Hughes teaches away from this conventional printing process.

8. These arguments are not persuasive for the following reasons:

a) The claims do not require the protective resin film to remain intact following the laser irradiation. Both Claims 1 and 18 require "evaporating...the resin film layer". Thus, even if Goeb removes a portion of the top layer, it reads on the claimed invention. Moreover, there is no requirement that the top layer be absent of any pigment. By existing on the top surface, the top layer would inherently protect that which is below. Any particular protective layer sought is not recited by the claims.

b) The claimed material appears to contain esters in a polymer form. The claim language "comprising" does not exclude other materials, even in major amounts. Further clarification may be required, but appears to be directed only at Claim 18.

c) While Applicants appear to acknowledge that the ultraviolet curing ink of Sonobe contains a monomer or oligomer, which would polymerize upon ultraviolet curing, it is unclear how this is

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different than the UV coating material (an ultraviolet curing type resin - a coating material which is hardened by ultraviolet energy) disclosed in the instant specification. While Sonobe does appear to teach the material as a "vehicle", it would obviously contain pigment to color the ink.

d) It is noted that the factual basis for the rejection found in the references cited above appears to be undisputed, and the arguments are directed at the underlying matter as to whether it would have been obvious to make the combination. However, the Examiner respectfully disagrees that there is any teaching away from this combination. Even accepting Applicants' position *arguendo*, the teaching away would be from the application method, and not from the inks themselves.

Hughes appears to be silent to the particular type of ink used, and Cicci teaches a known and commercially available ink (4:18-19), which one would have recognized as a substitute for the undisclosed ink type of Hughes. Thus, one would have found it obvious to make the combination in view of Hughes' suggestion of an ink and Cicci's use of a conventional ink type.

e) Note that the instant application does not claim any method for applying the multilayer structure, and therefore any arguments against the application method of Cicci would not be commensurate with the scope of the claim. What Cicci does teach is a commercially available ink (4:18-19) that one would have recognized as a substitute for the undisclosed ink material of Hughes.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW J. DANIELS whose telephone number is (571)272-2450. The examiner can normally be reached on Monday - Friday, 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Matthew J. Daniels/
Primary Examiner, Art Unit 1791
4/12/08

